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Advisory Committee on Heavy Oil and Oil Sands Development

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Advisory Committee on Heavy Oil
and Oil Sands Development



Office of the Minister

Legislature Building, Edmonton, Alberta, Canada T5K 2B6 403/427-3740

December 31, 1990

To His Honor
Gordon Towers
Lieutenant-Governor
Province of Alberta

Sir:

I have the honor to transmit the 1990 Annual Report
of the Advisory Committee on Heavy Oil and
Oil Sands Development.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Rick Orman".

Rick Orman
Minister of Energy



LEGISLATIVE ASSEMBLY
ALBERTA

December 31, 1990
To the Honourable Rick Orman
Minister of Energy

Sir:

I have the honor to transmit the 1990 Annual Report
of the Advisory Committee on Heavy Oil and
Oil Sands Development.

Respectfully submitted,

A handwritten signature in cursive script that reads "Bill Payne".

W.E. (Bill) Payne, MLA
Chairman

Statement of Chairman

Trends documented by federal, provincial, and industry agencies clearly demonstrate Canadian oil production is declining at an average annual rate of more than 20,000 barrels a day, while national demand rises each year by 25,000 barrels a day.

In view of these trends, accelerated heavy oil and oil sands development would appear to be a highly justified priority. Consequently, our Advisory Committee is encouraged that two major projects are continuing to move towards operational status. These are the OSLO project north of Fort McMurray including the OSLO upgrader facility near Redwater and the Bi-Provincial Upgrader near Lloydminster.

The primary focus of the Advisory Committee is the impact of heavy oil and oil sands projects on nearby communities. In this context, during the Advisory Committee's meeting with officials of the City of Fort McMurray, the issue of Industrial Tax Transfer (ITT) was raised. The Industrial Tax Transfer is a property surtax on resource based industries within the boundaries of an Improvement District. Payment is made by an Improvement District to an incorporated urban municipality, located within the boundaries of the I.D. to compensate urban municipalities for the provision of services to the employees of industries located in the Improvement District. In a possible intermediary role, the Advisory Committee has offered to assist in the achievement of a lasting agreement between the I.D. and the City of Fort McMurray.

The Advisory Committee's tour of AOSTRA's underground test facility (UTF) located north of Fort McMurray was certainly a highlight where "state of the art" technologies are demonstrating Alberta's leadership in underground oil sands development.

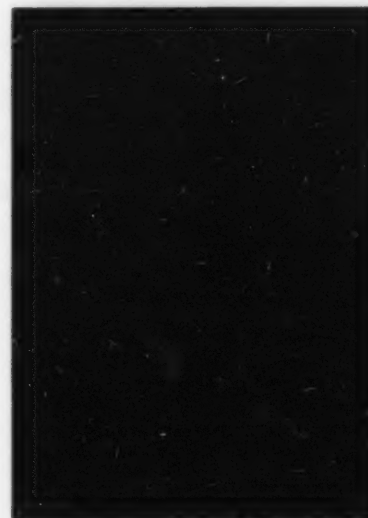
In December I presented a paper to the fourth annual conference of the Canadian Heavy Oil Industry entitled "Challenges and Opportuni-

ties facing the oil sands industry in Canada." Based on my discussions with the conference participants, I have every confidence in their ability to rise to their challenges and opportunities.

Beak Consulting Ltd. has been retained by the Alberta government to provide guidelines for municipalities to use when they become involved in environmental impact assessment resulting from major resource development. Because of the Advisory Committee's advisory experience in the heavy oil and oil sands sector, we have begun a process of periodic liaison to ensure effective coordination between the work of the consultants and the Advisory Committee.

As a final note, I would like to thank the members of the Advisory Committee and the leaders of the heavy oil and oil sands communities for their continued support and cooperation. I trust these cooperative relationships will continue to characterize the work of the Advisory Committee.

Bill Payne, MLA
Chairman



Role of the Committee

Entering its seventh year of operation, the Advisory Committee on Heavy Oil and Oil Sands Development continues to provide a continuing contact for communities impacted by heavy oil or oil sands projects. The Committee was initially established in 1983 by Order-in-Council under the provisions of the Energy and Natural Resources Amendment Act. Three years later, the formation of the Committee was re-confirmed by the Department of Energy Act. The mandate of the Advisory Committee runs for three year terms, the last of which expired in December, 1990. It was announced by the Honourable Rick Orman, Minister of Energy, at the Committee's October 12, 1990 meeting that the mandate of the Committee has been

extended for an additional three years, to December 1993.

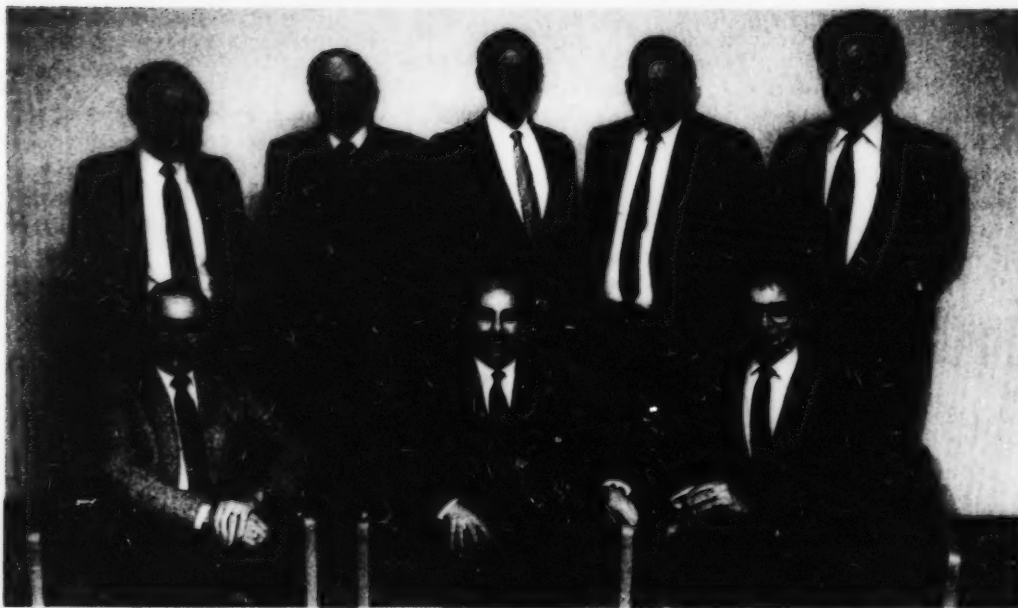
The role of the Advisory Committee has remained the same over the period of its existence, that is, to assist in the facilitating of those issues faced by municipalities impacted by heavy oil or oil sands developments. Through its public outreach function, the committee is able to learn, first hand, of the problems facing communities trying to accommodate their existing concerns while attempting to anticipate future developments. Moreover, the committee brings these concerns and suggestions to the attention of the appropriate government department or agency.



Committee Membership

In recognition of its role, the membership of the Committee is designed to provide a balanced representation, not only functionally but geographically. The membership consists of a member of the Legislative Assembly of Alberta as chairman, a senior official from Alberta Municipal Affairs as

vice-chairman, three community representatives providing a regional perspective from different parts of the Province, a senior official from the ERCB and an oil industry representative. Administrative support, including the position of Executive Director, is provided by Alberta Municipal Affairs.



Members of the Advisory Committee on Heavy Oil and Oil Sands Development:

Seated (left to right): Dick Aberg, Industry; Bill Payne, MLA – Chairman;
Jack Thomas, Alberta Municipal Affairs, Vice-Chairman;

Standing (left to right): Robin Vogelesang, Acting Executive Director; Bill Slawuta, Bonnyville;
Ralph Evans, Energy Resources Conservation Board; Don McGladdery, Fort McMurray;
Neil Gilliat, Slave Lake.

Development Activity

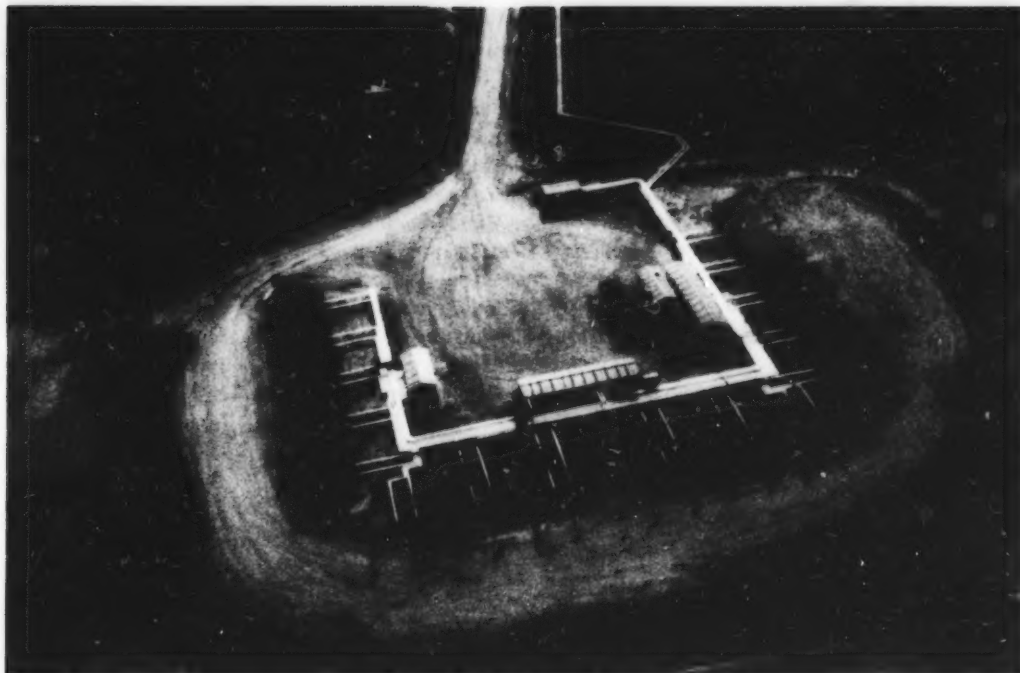
In 1990 the industry experienced another year characterized by price uncertainties. During the first half of the year the price of Alberta light and medium crude was relatively stable but averaged about \$20.60 per barrel. This is below a level needed to stimulate significant levels of heavy oil and oil sands development. Following the invasion of Kuwait the benchmark crude price immediately rose, reaching a peak over \$40 per barrel. However, the price fluctuated widely to year end and there was widespread speculation that an easing of tensions would drive prices back to or below the levels of the first half of the year.

Despite the price uncertainties and the slow down or suspension of some pilot projects, oil sands development proceeded on a number of fronts including commercial project expan-

sions and continued activity related to pilot projects. In late 1990, two commercial in situ projects, namely Esso's Cold Lake Production Project (CLPP) and Amoco's Elk Point Project, announced production expansion plans. The Esso development would add wells, facilities and pipelines required to tie-in Phases 7 and 8. This expansion will add 3,000 m³/d of bitumen production capacity. Amoco's scheme proposes to use both primary production and thermal stimulation to produce 2,220 m³/d of bitumen. Additionally, the Amoco and Suncor Primrose area projects, approved for thermal operation in 1988 but delayed for reasons of economics, commenced testing primary production potential in 1990. The encouraging results to date may lead to modified development plans using a combination of primary and thermal recovery methods.

Throughout 1990 work proceeded on the





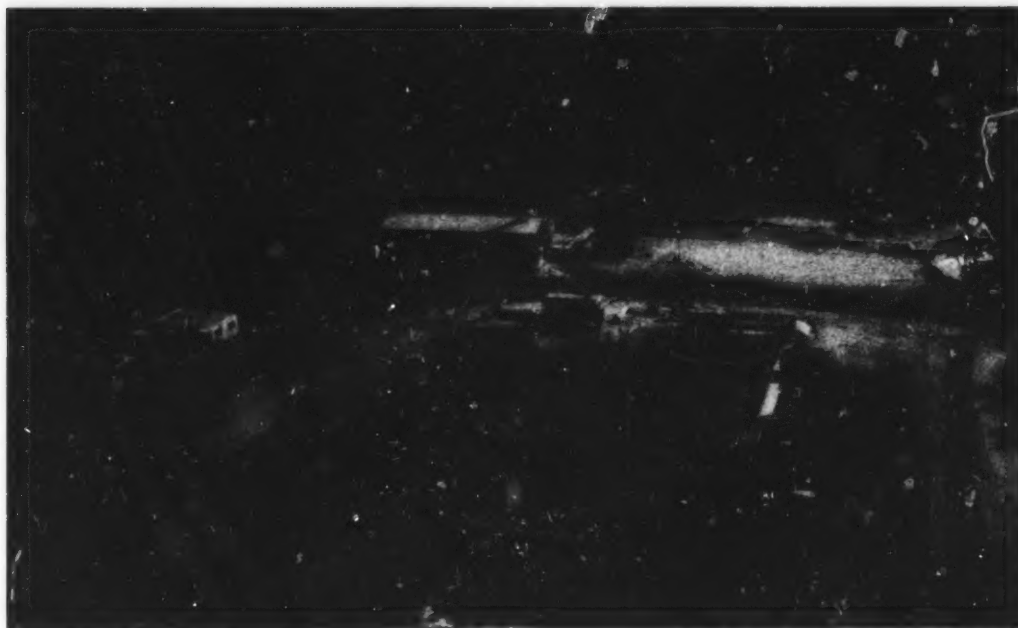
design of the OSLO Commercial Oil Sands Mining project. A recent development revision for this project has the upgrading facilities relocated from Fort McMurray to Redwater. This option, reinforces the rationale for stand-alone bitumen producers to feed regional upgraders and a phased approach to mineable oil sands developments.

On the technical side, several field test projects achieved encouraging results implying lower cost production and environmentally preferred techniques may become available in a few years. The AOSTRA Underground Test Facility (UTF) has demonstrated high recovery, attractive production rates of bitumen from horizontal wells using a steam assisted gravity drainage technique. The project is now moving into a second phase to test commercial length horizontal wells drilled from an underground chamber below the oil sands formation. The coupling of horizontal wells with thermal recovery processes has generated

considerable industry interest and a number of projects are underway or planned. Esso is proceeding with a test in Cold Lake and Chevron announced that further work on the HAS-Drive process, originally tested at the UTF site, is to proceed at the former Texaco Steepbank site.

The OSLO group continued experiments on the Dredging and Cold Water Extraction Process and are considering a full scale pilot project. This project differs markedly from the mining and hot water extraction schemes now in use at Suncor and Syncrude and has a number of potential advantages including reduced cost of bitumen production and tailings with better settling characteristics and reduced land disturbance for tailings sludge storage.

Another evolving technology, borehole mining, is being pursued by OSLO and Esso. The OSLO project north of Fort McMurray



tested borehole mining in shallow oil sands. In the Cold Lake area, Esso completed initial work on borehole drilling of deeper oil sands. These techniques are expected to reduce costs and access deposits not amenable to surface mining.

Experimentation is also proceeding at Esso's CLPP on the potential for using coal for steam raising. Pilot facilities were constructed and testing of coal handling, combustion efficiencies and by-product storage commenced in 1990 and will continue through 1991. The issue of efficient water usage took another major step forward with the commissioning of a new water recycle plant at BP's Wolf Lake project. This scheme is the second commercial oil sands project in Alberta to integrate a 100 percent produced water recycle process under the new Alberta Environment/ERCB guidelines, issued in 1989 to reduce fresh water requirements for in situ developments.

Other environmentally related activities included government/industry discussions to

establish guidelines which would limit odour emissions at in situ oil sands projects and the establishment of the odour response protocol in the Fort McMurray area. With the support of Alberta Environment, operators and the ERCB, an improved method of tracking industrial odours, identifying their causes and working with operators on ways to reduce or eliminate them was put in place.

A promising development in 1990 aimed at reducing SO₂ emissions was Suncor's initiative to pilot test novel technology at its Fort McMurray site. This new technology has the potential to reduce sulphur emissions from coke combustion or other flue gases by as much as 95 percent without the production of solid wastes normally associated with other sulphur dioxide recovery methods. Construction of the first full scale pilot test of this technology is expected to get underway in 1991.

Alberta Oil Sands/Heavy Oil Areas Active Thermal Projects

PROJECTS

Athabasca

- * 1. Syncrude Mildred Lake
- * 2. Suncor Mildred Lake
- 3. AOSTRA UTF
- 4. OSLO Ft. McMurray
- 5. Canterra Kearn Lake
- 6. OSLO Kearn Lake
- 7. Amoco Gregoire Lake
- 8. Unocal McLean
- 9. CS Resources Pelican
- 10. Unocal/Bufalo Creek
- 11. Amoco Brintnell
- 12. Petro Can Hangingstone
- 13. AEC Ipiatik Lake

Peace River

- * 14. Shell Cadotte Lake

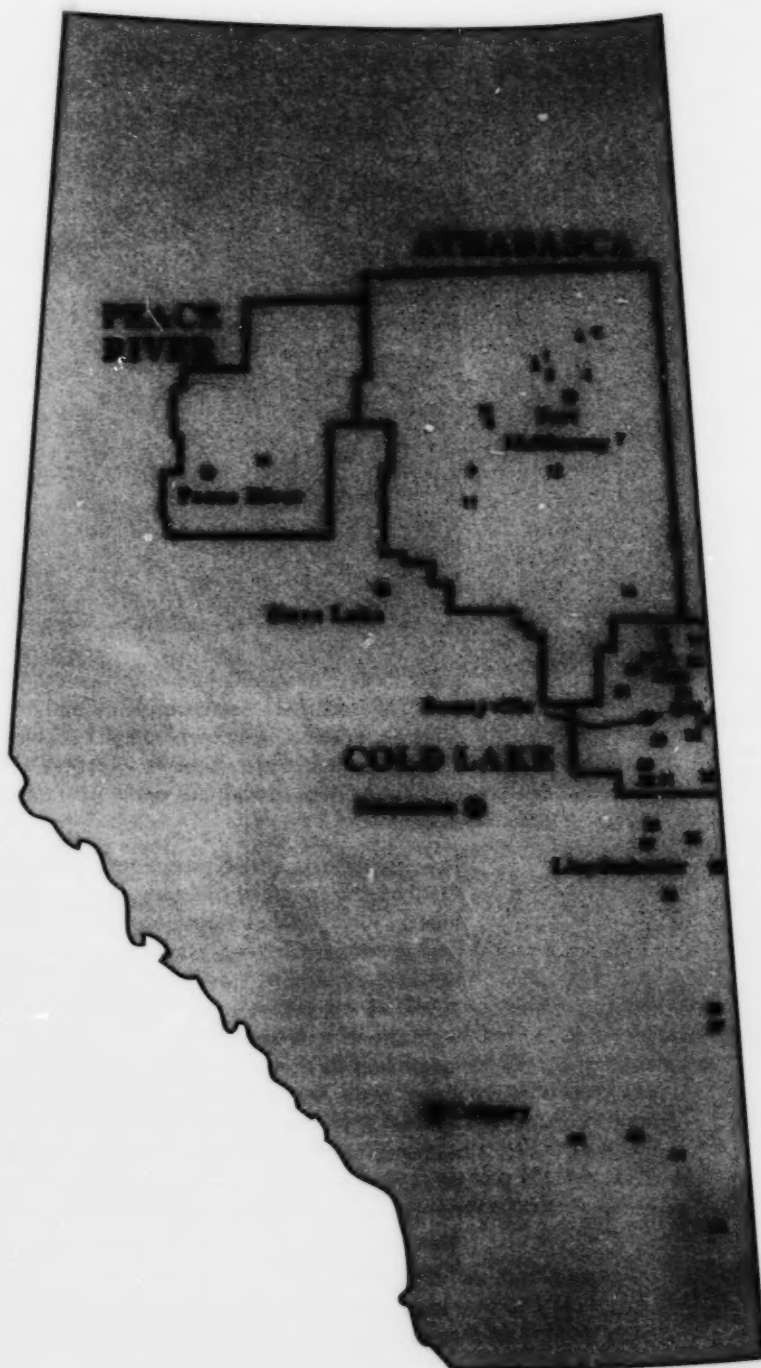
Cold Lake

- 15. Husky Fisher Creek
- * 16. Suncor Burnt Timber
- * 17. Amoco Primrose
- * 18. B.P. Wolf Lake (2)
- * 19. Esso Cold Lake (4)
- 20. Norcen Hilda Lake
- 21. Canoxy Manitokan
- 22. Husky Tucker Lake
- 23. Mobil Wolf Lake (2)
- 24. Bow Valley Marie Lake
- 25. Excel Ardmore
- 26. Koch Fort Kent
- 27. Suncor Fort Kent
- 28. Amoco Beaverdam (2)
- * 29. Murphy Lindbergh (2)
- * 30. Amoco Lindbergh (3)
- * 31. PanCanadian Lindbergh (3)
- 32. Norwest Lindbergh (3)
- 33. Mazzie Frog Lake (2)

Heavy Oil

- 34. Canoxy Morgan
- 35. Home Lloydminster
- 36. Can. N.W. Wildmere
- 37. Amoco Morgan
- 38. PanCanadian Provost
- 39. Norcen Provost
- 40. Can. N.W. Atlee-Buffalo
- 41. AEC Suffield
- 42. PanCanadian Countess
- 43. PanCanadian Medicine Hat

* Commercial Projects



Committee Activities and Operations

The Advisory Committee held eight meetings during 1990 involving a wide variety of issues ranging from the purely technical to the purely socio-economic. While fewer community based meetings were held in 1990, a great deal of information was presented by the committee's community representatives during the regularly scheduled meetings. Of note, an integral part of the Committee meetings is the members' reports during which the Advisory Committee is updated on activities in both the communities and resource sectors.

The early part of 1990 dealt with on-going discussions on the OSLO project particularly the question of access from Fort McMurray to the OSLO site. After industry and community representative consultation, the Advisory Committee provided advice to the Ministerial

Committee assigned to study the feasibility of a North Saskatchewan River pipeline serving the N.E. part of Alberta.

A meeting with the Director of the Alberta Chamber of Resources, Don Currie, provided the Advisory Committee with a first hand insight into the workings of the Chamber and more specifically its involvement in developing a Regional Upgrader Business Plan Study. Discussions also took place on the chosen site for the OSLO regional upgrader near Redwater.

The Chairman of the Advisory Committee and two members attended a trade show in Fort McMurray which attracted world wide representation. Of particular note was the obvious signs of "networking" being carried out among delegates during the show.



In the fall, a meeting was held in Fort McMurray between the Advisory Committee and senior city officials, the mayor and the city manager. The meeting concluded with a commitment by the Chairman of the Advisory Committee to contact the Ministers of Transportation and Municipal Affairs on the subject of access to the OSLO site and the Industrial Tax Transfer issue. In addition, the Chairman offered the assistance of the Advisory Committee in monitoring any initiatives designed to resolve the ITT cost sharing arrangements.

During the same trip to Fort McMurray, the Advisory Committee toured the AOSTRA UTF (underground test facility) site. Using pioneering technology, this project is designed to investigate the economic recovery of oil sands deposits that are too deep for surface mining and too shallow for conventional in situ recovery processes. A comprehensive briefing by project officials demonstrated the promising economic potential of this technology.

The chairman, Mr. Payne, delivered a speech to the fourth annual conference of the Canadian Heavy Oil Industry held on December 6,

1990 in Calgary. The topic of his speech was the "Challenges and Opportunities Facing the Oil Sands Industry in Canada."

Committee members were briefed on a submission by Alberta Energy to the Commons Energy Mines and Resources Committee dealing with the status of Alberta's oil sands industry.

The year concluded with a meeting held between the Advisory Committee and Beak Consulting Ltd., a consultant retained by Alberta Municipal Affairs to explore the socio-economic impacts of major industrial projects on selected Alberta municipalities. It was noted that the Advisory Committee could provide assistance in that component of the plan as well as provide contacts at the community level. Following this meeting, the Advisory Committee met informally with the Honourable Rick Orman, Minister of Energy to discuss aspects of the OSLO project as well as the mandate of the Advisory Committee.

